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THE JOURNAL OF PHILOSOPHY

THE ANTI-COPERNICAN REVOLUTION

THE "Copernican Revolution" is generally supposed to have inaugurated that standpoint in the analysis of natural facts which regards the descriptive categories of the exact sciences as exclusively and exhaustively valid in the world of space, time, and physical causation, that is, in the world of events. The association of such an attitude with Copernicus is, of course, rather pictorially than literally accurate, but the consequences of his great hypothesis did typify and justify the attitude of mind that I wish here to discuss. Such an attitude approaches the physical world with three main tenets: (*a*) It asserts that the type of analysis exemplified, say, in mathematical physics, constitutes the most adequate and empirically fruitful method of dealing with physical facts that has yet been discovered. (*b*) It registers the methodological consequence that so far as this method is concerned the special aspects which events assume in their relations to human observers are irrelevant to their intrinsic constitution as physically determined and that the pervasive laws of nature pursue their course quite independently of such observers and their experiences and volitions. (*c*) It uniformly draws the conclusion that in so far as this method is objectively valid, man with whatever of mind and soul he can muster is "read out of nature." This result has been philosophically unacceptable from the start. It has been the parent of "representative perception" and its attendant ills and the theme of innumerable "idealistic reactions against science." But the demonstrable relevance of scientific theories to concrete events and human adaptation to them has rendered abortive all protests against their theoretical incoherence. That scientific hypotheses are more directly applicable to, and verifiable in, constructive experiment than any philosophical alternative can possibly be, is fairly evident. That this verification is itself a mystery on the orthodox "Copernican" view has not seriously compromised its prestige. The result has been that while physical science is the most authoritative body of doctrine to which the modern mind can appeal, its presuppositions are such that no fully critical mind can accept them. The current scepticism which regards such methods as practically relevant though "really" false and misleading is hardly helpful. It merely registers the unresolved conflict between the obvious truth which science affirms and the no less obvious truth which it has seemed to deny. Such has been the situation down to our own time.

The most hopeful and forward-looking tendency in contemporary philosophy is that which is directing its efforts to the solution of this conflict. If the effort were just another external and wishful dialectic, asserting the obvious thesis that such "dualism" and "bifurcation" must *somehow* be mistaken, it would be wrecked as its predecessors have been on the rock of the obvious relevance of such "working fictions" to the actual course of events. But the approach this time is from the side of scientific theory itself. Everybody knows that modern physicists have been forced by their own standpoint to reconsider the nature and limits of scientific explanation. When such qualified scholars as Whitehead, Eddington, and Bridgman find that the interpretation of purely physical facts requires a "new epistemology" and a new concept of nature, a new situation has arisen. Still more significant, though lamentably neglected in this country, is that progressive and cumulative line of speculation in French philosophy, which from Cournot, through Poincaré and Boutroux, has reached in the work of Meyerson and Brunschvicg a combination of scientific information and philosophic insight elsewhere unequalled. In such work as this, utterly divorced from the partisanship and special pleading of many philosophies of science, there has developed an attitude toward physical theory in its relation to empirical fact which makes it possible, I believe, to see how and where the "Copernican Revolution" and its philosophical consequences may be revised in harmony with, and at the guidance of, a more adequate scientific knowledge. This "reconstruction," unlike its predecessors, rests rather on the accuracy than on the vagueness of our factual knowledge. And there precisely lies its promise.

In this country during the past few years it has become fashionable to announce this result by saying that "the mind," violently extruded from nature by scientific analysis, is now returning at the invitation of scientific theorists themselves. That in some sense this is true, no one who has seen Professor Eddington spread a feast of "values," consciousness, and even Deity for the returning prodigal in *The Nature of the Physical World,* can well doubt. When Carr and Haldane urged their idealistic brethren to come over and possess the land there was still considerable hesitancy. But when Whitehead turns from extensive abstraction to extensive romanticism and from variables to values there is legitimate excitement. The days of "bifurcation" are over and not only is mind returning to its ancient habitation, but considerable alterations are under way to suit the tenant. And just here lies the ambiguity and the danger against which this paper is a protest. There is undoubtedly a sense in which the "Copernican Revolution" was wrong and the current reaction against it a genuine progress. But there is also an extremely important sense in which that revolution was right and the current re-

action, by neglecting that fact, is tending to become a definitely retrograde movement. That science is partial and limited, that it includes only one aspect of empirical fact, seems to be true. That this aspect is therefore unreal, "symbolic," or "merely" abstract is as false as it ever seemed to be. To assert that what is physically irrelevant may still be a feature of natural events is legitimate. To press this to the conclusion that such characters are therefore not physically irrelevant, but are really the inner stuff and nature of all events, is illegitimate. For mind to "return to nature" as a relative, limited, but quite genuine element in actual occurrences is a promising and significant development. For a bifurcated, arbitrary, and absolute "human standpoint" to be spread indiscriminately over the whole of nature, animate and inanimate, is perilously like the "primitive mentality" which Lévy-Bruhl has so vividly described. Yet it is this second set of alternatives which, under the guise and cloak of the first, is now presented to us as the deliverance and climax of critical scientific knowledge. That the substitution is wholly misleading is the thesis to be defended in what follows.

If this "new animism" were characteristic merely of the various types of "Personalism" which traditionally and professionally find sermons in stones and Methodism in scientific methodology, it would require but little comment. But when such outstanding and authoritative thinkers as Eddington and Whitehead are seen to arrive at very similar conclusions it becomes evident that the situation is far more fundamental. There must be something in the legitimate critical analysis of scientific concepts to which these thinkers have contributed so splendidly which appears to justify the "anti-Copernican" conclusions of *Religion in the Making* and *The Nature of the Physical World*. I propose to inquire into the nature of this supposed justification and to estimate its validity. I have called it the "anti-Copernican Revolution" in order to indicate what seems to me its essentially reactionary character. The criticism of scientific categories has indeed led us to correct what was narrow, absolute, and exclusive in earlier theories of scientific method. It thus makes it possible for us to complete that great insight by a knowledge of its relevant context and conditions. But it is in no sense opposed to that insight in its positive and constructive bases. A philosophy of events, nascent as yet but genuinely promising, might embody this wider viewpoint without in any way compromising the scope and validity of scientific knowledge. Of such a philosophy the new animism is the spurious counterpart. As such it forms the basis and apology for the very considerable anti-Copernican revolution which is now upon us.

Let me first enumerate the principles from which each of these philosophies take its departure. As common property of both, such

principles raise no issue between the two and I do not propose to defend them here, but simply to set them down as the apparent and generally accepted consequences of recent developments in the philosophy of science. (*a*) A scientific explanation can never exhaustively determine the nature of events. By its very nature such explanation is partial and selective, it deals with events in certain respects, under specified aspects and limitations, and its results determine events only so far as those features are concerned. Any view such as "materialism" or naturalism in the older sense which pre-supposes such complete determination is therefore mistaken. (*b*) It follows that what is scientifically irrelevant is by no means necessarily excluded from nature. Its irrelevance is partial and relative, and it may well be that in some other natural context it is significant and important. Thus the fact that color makes no difference to a physical description does not justify the conclusion that color is not a natural fact. And the same is true of "tertiary qualities" or values. (*c*) An understanding of nature as "concrete" must include other aspects and categories than those of physical analysis. Events are other than their merely measurable properties, and some further categories, involved in the very nature of events, must be introduced into any adequate philosophy of the natural world. It will be seen, I think, that such principles, if true, constitute a very considerable vindication of the claims of traditional idealism. And I believe them to be true. Hence it is small wonder that the disciples of such idealism should regard their triumph over their "scientific" rivals as complete, and that such critics as Whitehead and Eddington, convinced of the inadequacy of purely scientific categories for the description of natural events, should have turned to the concepts of romantic idealism for the needed reconstruction. If "bifurcation" is to be overthrown it seems but natural that its traditional opponent should come into the kingdom. But here precisely lies the root and basis of the mistake.

The neglected feature of this whole development and the crucial one is what may best be described as the other side of bifurcation. It is true that in some respects traditional dualism has been ungenerous to the claims of "mind"; it is equally true that in others it has been uncommonly liberal. Whatever features of the experienced world could find no place among the equations of the physicist were to be regarded as mental, not because of any very obvious or intimate kinship with the thought and purpose of man, but simply as outside the genuine world of nature thus narrowly defined. The familiar status of the secondary qualities illustrates the point, and there are more fundamental instances, as I shall try to indicate below. Chance, indetermination, relativity, contingent actuality, all these found their way into the capacious receptacle of peculiarly mental and subject-

ive phenomena. Only in relation to the scheme of exact scientific description and upon the assumption of its exclusive physical validity was the elimination from nature made and only because they had thus been eliminated were such categories to be regarded as belonging in any special and exclusive sense to the realm of "mind" or "experience." It would appear to follow that if that elimination of such features from purely natural events is illegitimate the consequent assimilation to percipience, sentience, and the like is equally so. That this latter conclusion has not been drawn is the unfortunate fact and is, I believe, the basis of the anti-Copernican revolution in its more authoritative form.

Looking about for terms in which to describe the qualitative complexity, temporal contingency, and empirical actuality of natural events, the only categories found available have been those which in the past were supposed to apply only within a realm very like that of human percipience. That such a supposition was illegitimate, being based upon the very despised and rejected "bifurcation" of traditional dualism, should have been evident. But in fact such theorists as Whitehead and Eddington, seeing the need of some such categories and failing to observe their mistakenly limited character, have simply applied to the whole natural world ideas not yet purified of their specially human and subjective coloring. The result is a curious sort of bifurcated bifurcation; it presents one half of the traditional view with the negation of the other and equally essential factor. Relativity is to be "objective," we may say. But such relativity appears in human experience in the form of "perspectives" and in this special form presupposes "sentience," "apprehension," and the like. Hence all events must perforce be sentient in some general sense, since all manifest a very definite sort of relativity to their context and conditions. Why should the special features of human relativity be thus extended even to nominally inanimate nature? Precisely because, *on the dualistic theory*, the constitution of the natural world was such as to exclude such features, and the human case or its analogue was the only one in which such categories were applicable. Professor Whitehead has abandoned that theory, at least officially. But actually he has not abandoned it, since he has employed a set of ideas which presuppose and require it, the whole brood of romantic and "idealistic" interpretations of experience, value, and the like. The result is very curious. As objective these ideas now invade the realm even of the inorganic and set up their claim to validity and relevance for all events. But it is a bifurcated and still subjective notion of relativity and contingency that is thus objectified and something very like human consciousness becomes the property of the entire natural world. It is small wonder that the devotees of a "friendly" universe have detected the

cosmic cosiness of such a universe and are now prepared to assert that a stone is as much of a self as it can manage to be and only so is a concrete reality.[1] The combined assertion of the objectivity and also of the anthropocentric nature of such categories as a philosophy of events introduces does lead to just such a conclusion. But that combination is essentially a false one, and its scientific basis demands the negation rather than the affirmation of its ultimate and very cheerful deliverance.

Such is the general situation. Upon this confusion of categories, this carrying over of subjective views into the very theory that nominally eliminates the ground for their subjectivity, depend most of the philosophical conclusions of the anti-Copernican revolution. The fact that a category has become pervasive does not thereby render it the less subjective. For the subjective characters of things are those which they wear only in relation to a subject of experience, more particularly a human subject. To generalize such subjectivity is by no means to objectify it. Any fact is viewed objectively when placed in its context and conditions, when understood in terms of its limitations and environing circumstances. It is precisely here that the sharpest distinction must be made between a philosophy of events and this new animism which masquerades in its borrowed scientific raiment. The former would hold that subjective facts, those which occur only in relation to a subject of experience, are themselves also and without contradiction objective as features of the natural world, as precisely what occurs in the world of space, time, and causation when a human percipient is one factor in the interaction. The fact that such features find no place in a scientific analysis is to be expected. For such analysis deals only with those general and pervasive features of things which are applicable to events independently of such special conditions as those of percipience, volition, and the like. Their generality explains their scientific importance, but confers upon them no exclusive validity. "Subjectivity" becomes vicious and anomolous only when cut off from its natural conditions and viewed in terms of an unconditioned, and hence absolute and contradictory, relativity. But the new animism merely generalizes the "subjective" features of events by applying them indiscriminately and without regard to the special and complex context of their occurrence. It thus subjectifies the objective world by neglecting the limitations within which such special characters do in fact occur. The former view completes the Copernican Revolution by removing the artificial absolutism of its exclusive pretensions. The latter negates it by the renewed assertion that the particular aspect which things present to a human observer is the

[1] *Cf.* Wilson, G. A., "The Search for the Concrete," *The Monist*, Vol. XXXIX, No. 1, pp. 80 ff.

key and guide to their inner and pervasive constitution. It is thus overtly and definitely anti-Copernican. And the transition from the one position to the other comes in the application to natural events of categories which, under a dualistic régime, have been supposed to be "subjective" in the narrow and special sense. That these categories are in some sense applicable to all events is true and important. But that they are generally applicable in this special form and with all the psychic additions of human experience is false. And so, as I contend, is the theory which bases itself upon such a premise.

A more detailed analysis of the recent work of Professors Whitehead and Eddington will serve to amplify and substantiate the above thesis. Each of these thinkers is a pioneer in the field of critical scientific theory and each has discerned, to a very considerable extent, the type of reconstruction that must be made if a theory of scientific abstractions is to become a theory of events. But each has found the terms and categories of such a revision bound up with subjective meanings and human associations, themselves the consequences and implicates of the rejected theory. By employing these terms without first purifying them of such associations each in his own fashion has been led to the anti-Copernican conclusions noted above. Three central ideas demand our attention here. (*a*) The analysis of the physical meaning and status of relativity has suggested the analogy of human "perspectives" as a means of understanding such relativity in all events. Whitehead and Eddington follow very different paths here, but each is finally led to the conclusion that features of such perspectives normally regarded as quite specially subjective are characteristic even of physical relations and interactions. (*b*) That a purely physical analysis leaves events in certain respects indeterminate is recognized by both. That with respect to such analysis the further characters of events are arbitrary and contingent is the natural and necessary consequence. That such physically arbitrary determination bears an analogy to our human process of willing and valuation is further evident and, on a theory of bifurcation, only in the "subjective" sphere is such contingency recognizable. Hence the conclusion that the contingency of certain features of natural events with respect to the process of physical measurement and analysis is to be regarded as exemplifying volition or value in the human sense or something very like it. (*c*) That scientific truths are relevant and verifiable only in concrete and complex occurrences whose total character is not deducible from any mere equation, is insisted upon by both. Since the concrete complexity of such occurrences was eliminated from physical nature, only in human, "subjective," experience could it become manifest. The confusion between experiment, as the verification of predictions

in the contingent actuality of what happens, and experience as "sentience" or private "consciousness" was thus engendered. In both the theories in question it is unfortunately true that the appeal to experimental relevance, that is, to events, has been translated into an appeal to sentience in this narrower sense. In these three respects at least the confusion of categories and its anthropocentric consequence are manifest, as it seems to me, and demonstrable.

(*a*) The notion of relativity rests obviously upon the distinction between what objects are in themselves and what happens to them under external conditions. Those properties are absolute which follow from the isolated nature of a term or of a related system of terms, which require, that is to say, no extrinsic reference beyond the entity or system of entities in question. Whatever internal complexity may be involved, as in the idealistic "whole," the system as such is absolute in the sense that all its properties follow from its self-enclosed nature and none requires a reference to anything external to the system. Relative properties are those which belong to an entity or system only under conditions or in respect to some other term or terms. Thus whatever happens to an entity at a particular time or in virtue of its merely factual relations, and does not follow from its "nature," is in this sense relative. As applied to the physical world the distinction has had an important meaning. A scientific description was supposed to determine the intrinsic relatedness and properties of the system of physical objects. The characters which "science" ascribes to physical reality are its own proper characters, those which it only possesses under special conditions or in relation to entities not included in the description are variable and relative. The philosophy of "bifurcation" has employed this distinction to insist that only the absolute or intrinsic properties, only the self-enclosed systems of laws, are physically relevant, and that relative and variable features, such as sound and color, are not objectively and physically real. Since such characters actually and empirically exist, their locus and basis was necessarily that of their particular "subjective" context and secondary qualities were "in the mind" because they were *not* in the nature. Thus relativity has become associated with subjectivity and we have assumed, almost as an axiom, that relativity must have this specially anthropocentric character.

Critical epistemology has made it evident that this segregation is illegitimate, and that the special and variable characters of events are not arbitrary and merely subjective, but are actual and natural facts under the conditions of their occurrence. This might have meant something relatively simple and straightforward, namely that such special and variable features are no less real than general and pervasive relations and laws, though they are certainly less import-

ant for a scientific description. Something very like this is involved in the current distinction between "objects" and "events." By an "object" we mean some pervasive and isolable feature of events which as such and in its abstraction is self-identical and invariant from one event to another. By the event itself we mean the total complex occurrence in which such objects are realized, including variable and contingent features as well as isolable and repeatable ones. And by the assertion that objects are features of events we mean that the abstract gains its relevance to and discoverable efficacy in the concrete world only as a genuine though limited and partial aspect of such an occurrent situation. "Relativity" is applicable to all events as describing that irreducible aspect of their nature which depends upon special circumstances and conditions, on mere matter of fact collocations, and is thereby not reducible to general and "intrinsic" laws. Here the category of relativity is purged of any subjective reference and has its cash value in the diversity and uniqueness of what concretely occurs. So much seems clear.

But how are we to picture such relativity? One obvious instance of it occurs in the perspectives of human observers. Here the body and mind of the observer enter as factors in the situation and the features which events possess under these conditions are both special and variable. They are special in the sense that not all events are human percipients and hence it is inadvisable to generalize the particular situation as characteristic of universal nature. They are variable as the product of a very complex situation and one which is naturally somewhat unstable. Perceived colors vary most amazingly, perceived shapes are notoriously unreliable as information about what happens in the absence of the percipient. That the experienced qualities are real under these conditions seems undeniable. That they are highly relative as compared with the terms of physical analysis is equally true. Hence the natural tendency to say that they are both real and relative, such relativity being a manifest character of interacting events. That what appears "in my perspective" will not necessarily appear in yours, is then obvious. Under different conditions we should expect to discover different results. How far these characters are reliable evidence as to what is occurring elsewhere and under other conditions is a further question. Some are relatively more reliable than others, as common sense taught us long ago. But that the relatedness of things in a human perspective is a natural and objective fact seems a legitimate conclusion from the evidence at hand.

Small wonder, then, that the perspective analogy should come to hand as a most useful tool in the analysis of events. It was not so easy for us to see that it was essentially double-edged. As characteristic of the human standpoint it involves two factors which do

not, at first sight, seem natural candidates for generalization. A human perspective is a conscious grasping together of given relatedness; it involves the perception of the occurrent context. The mere togetherness of diverse characters in a single occurrence is here not the whole story; there is also the "prehension" of such features in the unity of a single experience. Again, as specifically human, the perspective in question depends to a considerable extent on our own volition. Since our attention and interest are important selective factors in determining what we perceive, it follows that the relative characters of things observed are in some measure determined by the purely and specifically human factor in the interaction. It would initially appear wholly unlikely that all events could possess either of these characters. Yet as a matter of fact Professor Whitehead has blessed them with the first of these and Professor Eddington with the second. And in each case the rather too generous extension depends on first taking the notion of relativity in its "bifurcated" sense and then, while denying the legitimacy of that bifurcation actually extending its results to the whole of nature.

Professor Whitehead's procedure is the more philosophical of the two. Since the relative and conditioned features of events depend upon a special context, we must refer to that context in order to understand them. In respect to a body moving uniformly and at a given rate, the frame of space and time is such and such. In a sparsely settled and undeveloped country the significance of individual initiative is of this or that value. In relation to a human eye and under normal atmospheric conditions the distant hills are of such a color. And so on. Hence in each case a particular context and center of reference is required to specify the actual locus and relevance of the assertion made. None is valid intrinsically or independent of such special conditions. We must take account of the circumstances in order to understand and, in a very extended sense, the event in question must "take account of" the situation in order to be what is. That is, as the product of such special conditions it takes account of and reflects them. But, as Professor Whitehead observes, Bacon long ago described such contingent relationship, such "taking account of" things, as "perception." His suggestion that in this sense all events have "perception" is heartily seconded by our author.[2] But what is this sense? Clearly, it does not involve explicit cognition, for this is all too human. But it might plausibly suggest an "uncognitive apprehension" and so in fact it does, on this theory.[3] Here, having identified physical relatedness with a sort of apprehension, we are ready to generalize. "The actual world is a manifold of prehensions, and a prehension is a pre-

[2] *Science and the Modern World*, p. 59.

[3] *Ibid.*, p. 97.

hensive occasion, and a prehensive occasion is the most concrete finite entity, conceived as what it is in itself and for itself and not from its aspect in the essence of another such occasion."[4] If we are still in any doubt as to the special character of these ubiquitous prehensions or "uncognitive apprehensions," it is later removed. "The most individual actual entity is a definite act of perceptivity,"[5] and since this perceptivity is immediate and non-cognitive, "the actual fact is a fact of æsthetic experience."[6]

The sequence here is plain enough. Having identified relativity to concrete and local contexts with a sort of apprehension, we must, in generalizing the one, be prepared to generalize the other as well. If the results are unfortunate they do but reflect the inadequacy of the transition by which they have been achieved. A bifurcated bifurcation is not a plausible doctrine. The procedure of Professor Eddington is even more surprising. He is attempting to explain to us the paradoxical results of the special theory of relativity. The solid fact from which we start is the independent validity of certain natural laws no matter which of a variety of space-time frames be used in our calculations. Since the laws remain invariant while the special conditions vary, it follows that these special conditions are no part of the laws as such, but remain variable and contingent with respect to them. A set of equations which is valid for any such reference system will not dictate the use of one of them rather than another. Now if we identified physical nature with such a system of invariant laws *and nothing else,* it would be true that the choice of one such frame rather than another would depend upon no physical fact at all. But it appears in fact that the "choice" of one such perspective rather than another has the most startling physical consequences. If a body is in motion all physical processes within it are slowed down and a clock, being itself a physical entity determined by physical laws, merely registers this actual consequence. As Eddington is fond of telling us, our physical measurements are within the world itself and conditioned by its objective constitution.[7] And if an observer, moving at a relatively rapid rate, is thus slowed down in his temporal processes, he will live through a shorter time than one not so moving. Hence the surprising paradox of the relativity of breakfasts, which strikes at the very root of our most sacred institutions. The man moving with a relatively great velocity will appear to devour fewer breakfasts than his more sluggish neighbor. The creation of a magnetic field is another physical consequence of motion and it is hard to believe that a magnetic field is not an

[4] *Ibid.,* p. 101.
[5] *Religion in the Making,* p. 108.
[6] *Ibid.,* p. 113.
[7] *The Nature of the Physical World,* pp. 144, 225, etc.

objective physical fact. Sometimes, at least, Professor Eddington obviously regards it as such.

But motion, as has been seen, is merely relative; the frame of reference is not dictated by the form of the physical law, but depends upon further circumstances which, with respect to it, are contingent. For Professor Eddington, now fully enmeshed in the bifurcationist hypothesis, the obviously potent factor here is human choice and the desire for simplicity. Since such variations occur only in a perspective and since "perspectives" depend on human choice and convenience, it thus becomes apparent that motion itself depends upon such convenience and hence that the number of breakfasts and the magnetic field likewise so depend. For they are clearly relative and, on the older view, relativity presupposes and rests upon human interests and preference. Thus we are left with the amazing consequence that our desire to make physical calculations balance determines the occurrence or non-occurrence of a magnetic field and the number of breakfasts in a human life. *We* like simplicity and set out to get it, magnetic fields and breakfasts to the contrary. "I do not think that there is anything in the basal relation structure which cries out for this special kind of combination; the significance of this process is not in inorganic nature. Its significance is that it corresponds to an outlook adopted by the mind *for its own reasons;* and any other building process would not converge to the *mental* scheme of world-building."[8] Again, when it is seen that such a pervasive uniformity as Einstein's law of gravitation does not follow from the mere idea of an external world, but presupposes some more special structure, the explanation offered is that "we ourselves, our conventions, the kind of thing that attracts our interest, are much more concerned than we realize in any account that we give of how the objects of the physical world are behaving."[9] Uniformity, being no intrinsic natural necessity, is the mere product of our desire for simplicity, and the sun obligingly verifies Einstein's prediction because we would have it so. "The fact that a predictable path through space and time is laid down for the earth is not a genuine restriction on its conduct, but is imposed by the formal scheme in which we draw up our account of its conduct."[10] Instances of this sort might be multiplied almost indefinitely. That mental convenience can determine the occurrence or non-occurrence of such apparently objective facts as the relative position of the earth, and the life processes of its inhabitants, is the conclusion of the analysis.

Unusual as are the results of such a theory, there is but little

[8] *Ibid.*, p. 240—my italics.
[9] *Ibid.*, p. 148.
[10] *Ibid.*, p. 152.

doubt as to the state of mind that produced it. Professor Eddington has seen quite clearly that mere general physical laws are not sufficient to determine the actual course of events. Occurrences which, with respect to these laws, might have been otherwise, are, as a matter of fact, thus and so. They are thus relative and extrinsic; they are, as he loves to say, no part of "nature's plan of structure."[11] If relativity means subjectivity, then into the mind with them and end the matter. Unfortunately the matter will not end so simply. For these relative facts have most important consequences and Professor Eddington himself quite usually regards the results achieved as genuine physical facts. But in becoming physical they have not ceased to remain human, arbitrary, and capricious. It is all a matter of convenience whether or not a given frame is selected, but the results of that selection are, or appear to be, observable physical fact. That they are such if our measurements are themselves part of the world they measure and subject to its limitations, seems fairly obvious. But how they can be if their only cause and motive is arbitrary convenience we can not see. Frankly I do not believe that the number of days in a man's life depends upon Professor Eddington's desire to simplify the laws of physics. That there is an element of convention in what we mean by a "day" is true enough, but that certain rhythmic processes on which life depends can be either accelerated or retarded by the way in which Einstein or anyone else chooses to look at them, seems to me unbelievable. Professor Eddington frankly wobbles at this point. Sometimes the Fitzgerald contraction is a physical fact dependent upon the microscopic entities in the measuring rod, sometimes it is a mere book-keeping device.[12] Upon occasion the sun can go wherever we choose to imagine it, since any such vagary would be consistent with the most general laws of nature. Again this is recognized as sheer fantasy and condition contrary to fact.[13] That it would go anywhere we choose if *such general laws and our preference were the only factors in question* is clear. That these are the only factors is a bifurcationist heritage from which our author can not free himself. The result is a set of picturesque but basically misleading paradoxes. Professor Eddington simply can not have it both ways. If the actual and determinate motion of the heavenly bodies is a mere matter of human convenience then it can hardly have independent physical results. If it does have such results then it requires a determinate physical cause beyond the preference of our measurements. The combination of the two is sheer mythology.

The way out of the difficulty is not very recondite. There are

[11] *Cf.*, for example, *ibid.*, p. 27 ff.

[12] Contrast *ibid.*, pp. 6–7 and 34–35.

[13] *Ibid.*, p. 152.

actually many further physical facts than those summed up in Einstein's law of gravitation and to say that a particular result is not determined by that law *and nothing else* is by no means equivalent to the assertion that it has no physical cause at all. Nor is it true that all alternatives that are consistent with such a general law are equally physically possible, so that we are free to select whichever of them we choose. There are perfectly good physical reasons why we can not be regarded as careering off into space at the rate specified and there are equally relevant factors which hold the sun in a relatively determinate course. That such facts *would be* indeterminate if the "absolute" structure of things were the only physical fact is true. That their actual specification *would be* merely conventional if all relativity to special and concrete conditions were relativity to human desires is equally so. But the lamentable consequences of such a view are the best possible evidence of its falsity. And the attempt to combine it with its opposite is the obvious source of the very paradoxical account which Professor Eddington has given us.

(*b*) With the two remaining examples of the confusion in question we may deal much more briefly. That natural events are indeterminate in some respects even when the laws of their general structure have been fully specified we have already seen. It is a truth which Professor Eddington has brought home to us in all manner of exciting ways. And the question next arises as to how this indetermination is to be understood. That, on the perspective analogy, it should be identified with the sort of arbitrariness involved in human preference and "determination," is a suggestion with which we are now familiar. Its further consequences must be indicated.

Professor Whitehead is wholly clear of this "arbitrary" view in its simpler and more glaring form. That there must be some reason in the objective structure of natural fact to explain our preference for one system of physical laws and of congruence rather than another was one of the most valuable and important theses of "The Concept of Nature." But in a somewhat different form he has lately been drawn toward much the same conclusion. For once more, how shall we picture the determinate and concrete being of a fact which, so far as general laws are concerned, might have been otherwise? Such a fact is limited, self-centered, a matter of fact on its own account and no mere deduction from something else. "Remembering the poetic rendering of our concrete experience, we see at once that the element of being valuable, of having value, of being an end in itself, of being something which is for its own sake, must not be omitted from the account of the event as the most concrete actual something."[14] At once the analogy leads to an identification.

[14] *Science and the Modern World*, p. 131.

"'Value' is the name I use for the intrinsic reality of an event."[15] And since actuality as opposed to mere abstract possibility depends upon this determinate being of that which, as additional to mere generalities, exists on its own account, it follows that depth of actuality is equivalent to depth of "value." So we learn that "the essence of actuality—that is, of vivid experience—is definiteness"[16] and in this definite experience, "value is the ultimate enjoyment of being actual."[17] That the enjoyment of definiteness was precisely the element in the situation which ought not to be generalized might seem obvious. The determinate and temporal actuality of a natural fact needs no such mythological supplementation. Yet, on a bifurcationist theory, only in such enjoyment did determinate being, excluded from the world of science, find its place. And it is just this limited aspect of factual determination which now claims unlimited relevance and validity.

The subsequent resort to a Deity who is "good" in a quite definite and congenial sense is a transparent development. If all things are "valuable" as determinate then there must be a transcendant *ground* for their "value," not merely as determinate, but also as desirable. It is not merely limitation, but "rightness of limitation,"[18] that is here in question. Value has become "harmony" and the fact that the world is determinate, specific, now means that it depends upon "a complete vision [which] co-ordinates and adjusts every detail."[19] No merely contingent and temporal world would explain so charming a result. "It is not the case that there is an actual world which accidentally happens to exhibit an order in nature. There is an actual world because there is an order in nature. The ordering entity is a necessary element in the metaphysical situation presented by the actual world."[20] And all this because actuality means value, value means harmony, and the order of nature thus taken as transcendent of its empirical and observable structure, requires an ordering entity. That such an entity is "antecedent to transition,"[21] a non-temporal actuality which "transcends the temporal world"[22] was, of course, to be expected. We had hoped something else than this revival of a hoary and non-empirical eternalism from the author of *The Principles of Natural Knowledge*. Let those who will be comforted by the heartening news that the apparent and partial evil of our world "becomes a stepping stone in the all-em-

[15] *Ibid.*
[16] *Religion in the Making*, p. 113.
[17] *Ibid.*, p. 100.
[18] *Ibid.*, p. 152.
[19] *Ibid.*, pp. 153–4.
[20] *Ibid.*, p. 104.
[21] *Ibid.*, p. 153.
[22] *Ibid.*, p. 156.

bracing ideals of God."[23] For my own part I remain inconsolable. The passage from information to edification has hardly been a progress. And all this because "value" is the unique solution of the indetermination of a purely abstract and bifurcated world.

The quantum theory has quite recently appeared to disclose a more startling indetermination within the realm of physical theory itself. What Heisenberg's *Principle of Indeterminacy* will mean to all varieties of anthropocentric physics so temperate a theorist as Professor Bridgman has already indicated. The fact itself appears to be immensely instructive. That no one set of physical measurements can completely determine the complexity of natural fact and that as a consequence we must expect a definite element of indeterminacy in all such calculations is just what we should have expected. It agrees naturally enough with the view that *all* abstract determinations are partial as regards the total event. That even the selected features open to physical investigation are similarly indeterminate is but an unexpected confirmation of the general position. But is not this just what the devotees of free will have always urged? Perhaps electrons, like men, are free in a measure to make up their minds. How thoroughly jolly that would be! Professor Eddington is most circumspect here, but the association with "free will" is uppermost in his mind, and in spite of grave doubts about the status of such freedom in statistical laws, he manages to hold out some hopes. But surely the freedom thus promised is both spiritually and intellectually barren. It resembles nothing so much as the "swerve" of the atoms in the Epicurean theory, and has no further moral significance. That man is free in the sense that his effort is a definite factor in the course of events we may well agree. That this freedom is either helped or hindered by vagaries within the atom is extremely doubtful. Once more, the fact of indetermination is by no means simply to be identified with its human analogue and counterpart.

(*c*) The appeal from the "abstract" to the "concrete" is a very pervasive feature of contemporary philosophy and of the theories under discussion in particular. A scientific law, dealing as it does with certain features only of concrete events is, *taken in itself*, a "mere" abstraction or possibility. It described what would happen under certain simplified conditions, and its validity lies beyond itself in its actual relevance to the world of experience. Now, once again, if the natural world were restricted to such abstractions *and nothing else*, the whole empirical complexity of things would fall within the realm of "mind" or subjectivity. Here Professor Eddington is very emphatic. The world of physics is a mere world of quantitative correlations, of "pointer readings," which might

[23] *Ibid.*, p. 155.

apply within any one of a number of possible worlds. The following statement is characteristic. "Of the infinite number of worlds which are examples of what might be possible under the laws of nature, there is one which does something more than fulfill those laws of nature. This property, which is evidently not definable with respect to any of the laws of nature, we describe as "actuality," generally using the word as a kind of halo of indefinite import. We recognize the actuality of a particular world because it is that world alone with which consciousness interacts." [24] And since the one approach to nature is through "consciousness," "the differentiation of the actual from the non-actual is only expressible by reference to mind." [25] This actual and non-metrical feature of events is hence properly described as "mind-stuff"—"the stuff of the world is mind-stuff." [26] Professor Eddington is careful to add that such ubiquitous mentality is somewhat unlike "mind" in the normal sense, and more extensive. "Consciousness is not sharply defined, but fades into subconsciousness; and beyond that we must postulate something indefinite but yet continuous with our mental nature. This I take to be the world-stuff." [27] It is just this indefinite continuation of our mental nature which best characterizes the attitude in question.

Whitehead proceeds in a very similar fashion. In *Religion in the Making* we are told that "here 'feeling' is used as a synonym for actuality." [28] And again, "An actual thing is an elicited feeling value which is analyzable as the outcome of the graded grasping of elements of the universe into the unity of one fact." [29] Bradley was accustomed to speak in a similar fashion, his protest against "bloodless categories" bringing him to the immediacy of undifferentiated feeling as the basis of experience. Of all this various progeny Bishop Berkeley is surely the spiritual parent and the argument has varied but little since his time. The only concrete events in which abstract theories can be directly verified are those in which our own minds and bodies are in some wise implicated. If such events are excluded from the external world and turned into "ideas" then the locus of empirical verification is in all truth a world of "ideas." That this depends upon and presupposes the very theory of representative perception to which it objects has been clearly shown by Professor Kemp Smith." [30] If *all* empirical content is subjective the result follows clearly enough. But if that limitation is

[24] *The Nature of the Physical World*, pp. 265–6.
[25] *Ibid.*, p. 267.
[26] *Ibid.*, p. 276.
[27] *Ibid.*, p. 280.
[28] *Religion in the Making*, p. 104.
[29] *Ibid.*, p. 150.
[30] *Prolegomena to an Idealist Theory of Knowledge*, p. 54 ff.

illegitimate, as it clearly is for Whitehead, the conclusion is a sheer *non sequitur*. We agree that all events must be actual happenings and not mere abstractions. But there is no good reason to suppose that *feeling* or *mind-stuff* is inseparable from such events unless we have already limited events to the realm of subjective experience. And surely the fallacy of that procedure is by this time evident.

Professor Dewey has made the point that the "experience" to which scientific experiment appeals is not something private and subjective, a matter of feeling values or of mind-stuff.[31] Its concreteness lies in the intersection of the merely possible theory with the *de facto* concatenation of events. "Actuality" there is, in all truth, but it is discoverable in what we feel, the course of events in which we live and move and have our being, and not in the mere feeling of them. The special nature of our feeling or of the immediacy with which facts present themselves remains irrelevant to the verifiable actuality of our result. It is, of course, true that the only matters of fact to which we have direct access are those in which our minds and bodies may make a difference. But this is just one more instance of the basic fact that our knowing is itself an event and subject to the special condition which such an occurrence pre-supposes and requires. The part of wisdom is to recognize such relativity as a real but limited feature of the events to which we appeal. In so far as scientific theory eliminated events it eliminated concrete actuality. The return to actuality involves an appeal to directly experienced events, but it does not involve any special privileges for our immediate experience of them. On the contrary, it gives us good ground for supposing that "feeling values" are the product of special conditions which exist only at a late stage in the evolutionary process.

To sum up: The generalization of the categories of relativity, contingency, matter-of-fact actuality, is the ground and basis for the generalization of percipience, volition, and mentality that has accompanied it. This is justified only if the latter set are inseparably connected with the former. The only *scientific* ground for supposing such inseparability was the belief that the "natural" world in its non-human aspects excludes the former as well as the latter and that only "in the mind" have the categories in question an identifiable habitat. But recent philosophy of science denies this belief and removes whatever plausibility it may once have possessed. Hence it leaves us more than ever free to disengage the structural features of events from their romantic associations and to apply them independently to the natural world. Such a task is not easy and it is not surprising that even Professors Whitehead and Eddington should have been misled by the existing situation. But it is es-

[31] *Experience and Nature*, pp. 1–2.

sential, none the less, since the alternative of the "new animism" has as its indispensable premise a belief whose validity depends wholly on the system of ideas which it overtly and emphatically rejects.

I conclude therefore that there is rather less than more reason than heretofore to interpret all events in anthropocentric terms. The limitation of science to its proper context has strengthened the purely secular view of its significance both by removing obvious paradoxes and by freeing for general use the indispensable and heretofore merely subjective categories of natural events. The bearing of this on the "Copernican" tenets enumerated at the outset is as follows:

(*a*) Modern science has held that the terms of physical analysis are both pervasive and exhaustive. We now deny that they are exhaustive but have no good reason for denying that they are pervasive and literally true *of the aspect of events with which they deal.* The fact that they *would be* merely symbolic and artificial if misinterpreted as absolute is no ground at all for believing that they are such in fact, nor can the removal of the misinterpretation be made to substantiate the sceptical conclusion based upon it.

(*b*) The irrelevance of human experience in its more special features to a scientific description of natural interactions can not be made the basis for their exclusion from nature. And so far the Copernican revolution was wrong. But the fact remains that they *are* irrelevant to many physical processes, and we have no more reason than ever for supposing that the general run of events requires mind, sentience, or volition in any form whatever. It does require the contingent actuality of occurrence, but that is another story.

(*c*) That relative human perspectives are objectively real is true, and a false absolution was in error in denying that fact. But it is just as true that if the relative is objectively real it is also really and objectively relative. Human experience is a natural occurrence just where, when, and as it has been found to occur. As such it is found to be an effective though limited factor in many types of interaction. There is no more evidence than there ever was of its independence of such natural conditions or its "reality" in any other form than that of a late and limited emergent within a natural world which it did not create and whose more pervasive features it can not seriously alter. The defenders of an absolute God, freedom, and immortality have nothing to gain from the contemporary philosophy of science.

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APROPOS OF ESSENCES

SANTAYANA is a connoisseur of essences—they fall about his head like showers of brilliantly colored confetti; while he, the spiritual reveler, senses them with keen delight. Drake, with an Anglican faith that even beauty has its purposes, would turn essences to noble ends. Sellars, with a low-church fear of popery, decides that he must call a halt.

What are these controversial things which seem to exist or subsist in such profusion? Whether we want to follow him to the end or not, Santayana provides an intelligible starting point. "This," he says, referring to the content of a given moment of experience, "can not change its nature, though what we have before us a moment later may be something but slightly different from *this;* and of course the essence now brought to view can be slightly different from the one formerly in evidence only because each is eternally itself, so that the least variant from it marks and constitutes a different essence." And each *this* or essence must remain the *same,* he tells us later, or "it would be impossible to say or think anything on any subject. No essence could be recognized, and therefore no change could be specified."[1] It is not hard to see the truth of this position. Any process, physical or mental, requires seried points of departure that remain the same. Assume that any given point in the series changes and it changes only with reference to a further fixed point standing where the given point formerly stood. Assume that that fixed point is shifted and it is shifted only with reference to another. In any qualitative transformation the points involved are unique qualities instead of points in space. Every moment of our past abides unchanging in a Platonic world, else there is no change whatever.

Keeping to the conception of essences as necessary implications of change we arrive at a number of significant conclusions. A particular sensation is an essence, for it must be identical with itself or all future transitions from it lack direction and character and we are landed in the limbo of pure change which is no change at all. An existent, which is only a more elaborate and stable situation, is an essence. In all analysis and comparison of it and final conclusions about it, we have the identical existent as the starting point. Objective reference is the identity of the existent persisting through the subsequent consideration of it. The identity of the existent thus becomes its datum in consciousness. Error and even illusion have their essences, for if they were not identical with themselves as somethings the subsequent processes of correction or elimination would

[1] George Santayana, *Scepticism and Animal Faith,* pp. 113–114.

have no significance. And all of these essences subsist before the changes which imply them occur, for being abstract identities they can not come into reality, and the whole antecedent universe would be unspecified as antecedent unless these identities were in some sense real all the time. The smallest section of change thus involves a universe of essences.

But enough has been said for the present purpose. No sooner have the exponents of essences stated these seemingly incontrovertible principles than their days are full of trouble. With the problems that have appeared we are all more or less familiar. Some essences are existents; at the same time they are data representing the existents in thought. If they are one-to-one identical with the existents, then they present the existents in their infinite complexity, a conclusion which is patently fallacious. If as data they are not completely identical with the existents they leave an overplus of the existents unrepresented in thought; but this is again fallacious, for the existents are in some way wholly represented in thought. Again, if essences are deprived of reference to existence and of moral appraisal, as Santayana claims, "the essence of beauty is no more lovely than the essence of dandruff."[2] Essences without relations shrivel to nothingness. Further, the essence as datum presented to two people, or a dozen people, must be the same, or they are thinking and talking about so many different things. But how can it be the same when it appears to each in a different context? And, further to confound the innocent, essences are both particular and universal at the same time. Drake in stating these problems goes a long way, but he fails to present a principle that will bind the whole situation together. At best he is still talking about essences and what they do.

To see the situation in historical perspective may help. When the Hegelian method proved inadequate, philosophers, taking the cue from positive science, fell back upon the humble task of analysis and description, using logic as the auxilliary of both. Pragmatism, new realism, critical realism, are philosophies of decadence, counsels of metaphysical despair. The same tendency shows in the implicit positivism of Whitehead and in the probabilism that is creeping into speculative physics *via* Heisenberg. Such views do very well for practical affairs, but they are hopeless for metaphysics. The world falls into an infinite multiplicity of self-subsistent essences, or into pure scepticism, or into journalistic narrative. And when attempt is made to explain any process like that of knowing, one has at hand only certain particular objects or aspects of objects.

The doctrine of essences as presented by Strong and Drake is description making a desperate effort to express internal connection

[2] Sterling P. Lamprecht, "Santayana, Then and Now," this JOURNAL, Vol. XXV (1928), No. 20, p. 546.

in external terms. Drake uses three categories in his analysis of cognition, the knower, the object, and the datum,[3] but where is the necessity requiring this arrangement? Why not an infinite system of mediating categories between the datum and the object or between the datum and the knower? Again, in criticizing the so-called pan-objectivists, he suggests that an essence may be in certain respects identical with the object existing in front of it and in other respects non-existent.[4] But this is only an attempt at description and the patent difficulty with the unrepresented part of the object flows from the fact that at best it is mere description. To say that essences are both here and there, that they are in the thing and in the mind or that they are the same for two people, answers no metaphysical question. To affirm that self-subsistent entities permit evaluation is likewise futile. To explain, however elaborately, in particular terms that essences can be both particular and universal avails nothing. Statements of this sort afford no generating principle according to which these contradictory pairs must occur. And calling matter "psychic stuff,"[5] as an outgrowth of epistemological discussion, robs the fine doctrine of essence of all its subtlety by making it gross with substance. Likewise, Santayana's denial of metaphysics and resort to animal faith belies his acute analysis of change.

In finding the principle that is needed we must be on our guard against swinging back to the Hegelian analysis with its over-emphasis of rationality. No injustice should be done to the self-subsistent entities, and yet the possibility of process and evaluation must be preserved. Let us try the principle of change which Santayana has so generously handed us. It must never be forgotten that when we are deducing self-subsistent essences from change we are assuming change to be with them equally fundamental. In spite of the contradiction between identity and change they appear universally together—they can not even be imagined apart except as limits of abstraction and even as a limit each presupposes the other. Each is infinitely deep and exclusive in its reality and yet it can be progressively resolved into the other. This is to be witnessed when we stress change alone and drift into pure functionalism or when we stress identity alone and drift into a philosophy of substance. The doctrine of internal relations interpreted strictly makes the relations constitutive of the terms and the terms lose their ontological status. The doctrine of external relations through over-emphasis of the terms drives relations out of reality and reduces the world to unevaluated identity. The contention here presented is that change and identity, relations and terms, are one principle, each possessing

[3] Durant Drake: *Mind and its Place in Nature*, p. 9.

[4] *Ibid.*, p. 164.

[5] *Ibid.*, p. 243.

its ontological status and yet not contingently and eclectically thrown with the other, but maintaining it in relativistic tension. This principle might be called *activity* since, on the one hand, it does not allow the universe to lapse into abstract identity which is stagnation and, on the other, it does not allow the universe to fly into indeterminate change which is also stagnation. The principle of change-identity holds within itself as within a crystal sphere all the unchanging essences and all the possible changes.

With such a principle in mind it is easier to meet the problems centering around the doctrine of essence. Take an existent, for instance; it is merely an essence within a process. A significant factor within that essence is that most of the vast complexity of the thing remains only implicit, but that fact does not make it anything other than an essence. That essence in its independent identity persists throughout any subsequent process which concerns it, whether the process be chemical or mental. In a mental process the existent as essence persists as unmodified as a part of the specification of the process wherein it is modified. In its unmodified status it is, as the analysis of change must show, just as present to consciousness as the process of modification itself. Datum is this persistent identity, nothing added, nothing subtracted. Even secondary qualities, Drake and Strong to the contrary notwithstanding, exist at a certain time and place at the instant of recognition and all subsequent analyses, psychological or physical, involving protons and electrons on the one hand and mental factors on the other, are significant with reference to that first sensed identity. The patent contradictions are but instances of the universal behavior of the identity-change principle. Or take the case of two minds perceiving or conceiving the same thing. The existent as essence is the same for both or the base line of differentiation between the two minds is lost. To say that the thing is mediated by different apperceptive masses in the two cases is to admit that there is an identical existent upon which the two different experiences work differently. And, again, the essence of the existent is just as present to each mind as the process of differentiation. This also is only a further instance of the normal working of the identity-change principle. To consider another moot question, the essences are both universal and particular. Every essence is particular in the infinite depth of its self-identity and at the same time it is universal as it serves as an orienting point in change.

It is possible that the change-identity principle might reconcile the positions of the new realists and the critical realists. The former tend to take their identities, including both existents and subsistents, as being immediately known, without the distortion due to internal relations. According to the principle here presented this is true, for

every identity must persist as such through any modification that may come to it. The critical realists, on the other hand, stress mediation, though in physiological and psychological terms rather than in those of internal relations. Some of them as we have seen recognize essences or identities as a part of the mechanics of their epistemology in a way suggestive of the objects and entities of the new realists. The change-identity principle involves the immediacy of all identities and at the same time their contradictory but necessary mediation. It is possible that in the light of this synthesis the new realists and the critical realists, so far as each other are concerned, may beat their swords into plowshares and their spears into pruning hooks.

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BOOK REVIEWS

The Theory of Morals. E. F. CARRITT. Oxford University Press. 1928. Pp. xi + 144.

Clear in thought, rapid in the movement of its argument, marked with frequent clever turns of repartee, one meets in these pages a critical account of historic moral theories which can scarcely fail to bring refreshment to the philosopher who has plodded longer and dustier roads over the same general territory, and stimulus to the novice who seeks enlightenment upon the meaning of life and the solution of its complex situations. It is to the latter as the "plain man," that the book is especially addressed. If its pungent criticism presupposes a philosophical orientation beyond the average, at least the intelligence of the "plain man" is given a decent respect, as it frequently is not in this day of numerous and profitable popularizations of technical inquiries.

Ethics seems to Professor Carritt to offer the best approach to the general problems of philosophy. The problems of duty are the most "natural" and are most likely to be asked of all the questions which philosophy raises. We may live in a fairly thoughtful way without raising problems of ultimate reality, but that conduct can and ought to be judged has never been seriously doubted. When men have learned that other peoples support views of conduct which are different from their own, and that other religions claim equally, divine authority for their commandments and anathemas, they are forced to critical examination of their own positions, if only in order to support them. Our author here turns to review central doctrines which have developed out of this critical inquiry.

Hedonism is the first position to be approached. Its weakness seems to lie, we are told, in failure to account for what *ought* to be in terms of what is *pleasant*—a totally different conception. Psychological hedonism denies all distinctions of moral worth. "Had it avoided the blunder of supposing all desires to be desires of pleasure simply, it might have fallen back on the balder statement that every man always does what at the moment he most desires to do. And it would be almost as difficult for this theory as for psychological hedonism to retain the notion of right actions in the sense of actions which we ought to do, if there is only one thing we can do" (p. 27). "If any one ask us, 'Why ought I to do these acts you call my duty?' the only answer is, 'Because they *are* your *duty*,' and if he does not see this we can not make him, unless by informing him about matters of fact; if he sees they are duties, he can no more ask why he ought to do them than why he should believe what is true. To answer, 'Because they are the best policy,' would not answer the question why he *ought* to do them" (p. 29). The view that the greatest happiness of the greatest number should be our aim, seems to our author equally unsatisfactory. To argue that, since desire of pleasure is the only motive, pleasure should be sought impartially for all men is like arguing that since I care for nothing but eating I should stint myself to feed the poor. "The transition from my own pleasure to that of others is slurred over by the utilitarian maxim that 'every one is to count for one,' which, under the innocent guise of arithmetic, introduces another ground for action besides pleasure, namely justice" (p. 20).

An all too brief consideration of "Evolutionary Ethics" follows. The struggle for existence secures only existence. If we turn to the race, seeking there to bring about the superman, we are confronted only by confusion, says our author. "Ability to survive is no test of goodness unless we think that the process of the world is designed and guided to secure the survival of goodness. Would the true superman, being juster and more humane than ourselves, thank us for producing him by cruelty and injustice? If he were the kind of creature to do so, the duty of sacrificing anything for his production will be vainly urged upon us" (p. 36).

But if hedonism can be shown to be inconsistent, perfectionism will share no better fate. It is, argues our author: (1) vague; (2) impossible; (3) useless. The doctrine of the "Common Good," too, must be dispensed with, being ambiguous in both words of the term. *Good* is used confusedly in three senses: as (1) satisfying; (2) right; (3) thought right. (Cf. pp. 65 ff.) *Common* assumes falsely that *good* action is the choice of all men. The position is guilty of the circular argument: "right action is action which coheres with

right actions." "But (*a*) doing what I think wrong may give *most* satisfaction both to me and to others; certainly it often seems to me that it will. (*b*) It is only doing what I *think* right which gives me moral satisfaction, and this will give no moral satisfaction to others unless they know I did what I thought right. (*c*) Even then they may think I thought and did wrong" (p. 65).

Whether we look at the hedonist or the perfectionist goal, the conclusion to be reached, we are told, is that the notion of a *Summum Bonum* has been the "*ignis fatuus* of moral philosophy" (p. 74). Thus, although there is close similarity to Kant throughout the development of the book, yet there is by no means complete agreement. For Kant, in his view of duty and the moral law, also sets up a *Summum Bonum,* just as empty as that of the hedonists. It is as impossible to obtain any code of duties from the idea of duty as from the idea of ultimate good or final purpose or end. Kant saw the latter, but failed to see the former. "We do not apprehend the beauty of a picture or a poem by a process of deduction from the idea of beauty. We should not reach the distinctions of right and wrong, of true and false, of beautiful and ugly, by mere experience of a world we share with the animals unless our minds were so constituted as to recognize them, but it is in particular instances that we first do so" (p. 85). We do not first morally apprehend the obligation in rules, then recognize the relation of these rules to alternative possible courses of action, then determine our actions in the light of this relationship. Rather, we first morally apprehend the rightness of certain courses of action, and then generalize the rules. "The real value of Kant's principle of universality is practical, not theoretical; it is a dodge, like asking an angry child to look at its face in the mirror. . . . I may judge more clearly if I imagine the agent to be someone else." (p. 116). Thus, dispensing with the *Summum Bonum* and with extra-moral means of determining the rightness of specific actions, our author would rely for his starting point upon moral apprehension. Though *natural,* I do not take it that this apprehension is either a human creation or illusion, but the means of ascertaining the bearing upon specific problems of conduct of an order of right which may have genuine, or even world significance.

There is a British flavor to the work. The tendency to deal seriously with classical ethical theory, indeed, seems at the moment to be essentially a British characteristic. One probably must admit that it may be a more worthwhile undertaking to analyze again the thought of the great moralists upon such subjects as *The Common Good, Self-Realization and Self-Sacrifice, Moral Motive,* and *Moral Faculty,* than to speculate upon the more evanescent themes of many

contemporary books in ethics. On the other hand, it seems unfortunate that so admirable a treatment is confined so closely to the lines of a single ethical tradition. The influence of such men as Renouvier, James, Dewey, or Durkheim should surely be felt no less distinctly in a study of ethical theory than that of Rashdall, Ritchie, or Russell. This criticism of localization applies no more to the present book than to a common habit of treatment within each of the great ethical traditions.

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JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. Vol. XXXVIII, 3. The Rôle of Experience in Descartes' Theory of Method. II: *R. M. Blake.* Theses concerning the Foundations of Logic: *Marvin Farber.* Is Mathematics a "Deductive" Science?: *Harold R. Smart.* The Contrast between Inference and Perception: *Richard Robinson.*

Campanella, Tommaso: Syntagma de Libris Propriis. A cura di Vincenzo Spampanato. (Opuscoli Filosofici. Testi e documenti inediti o rari pubblicati da Giovanni Gentile) Milano: Bestetti & Tumminelli. 1927. 133 pp. 25 lire.

Institute for Research in the Social Sciences. The University of Virginia. Edited with an Introduction by Wilson Gee: Social Sciences. Its Fundamental Methods and Objectives. R. E. Park, A. A. Young, Clark Wissler, R. E. Chaddock, R. S. Woodworth, Roscoe Pound, A. M. Schlesinger, John Dewey, C. A. Beard. New York: Macmillan Co. 1929. x + 305 pp.

Mauduit, Roger: Ballanche. Le Vieillard et le Jeune Homme. Nouvelle Edition avec Introduction et Notes. Paris: Félix Alcan. 1929. 144 pp. 15 frcs.

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Russell, Bertrand: Philosophie der Materie. Deutsch von K. Grelling. (Wissenschaft und Hypothese XXXII). Leipzig und Berlin: B. G. Teubner. 1929. xi + 433 pp. 18 M.

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Zambeccari, Giuseppe: Il Sonno e la Vigilia. Lettera. A Cura di Giovanni Gentile. (Opuscoli Filosofici. Testi e documenti inediti o rari pubblicati da Giovanni Gentile.) Milano: Bestetti & Tumminelli. 1929. 93 pp. 25 lire.

NOTES AND NEWS

A second edition of John Dewey's Carus Lectures, *Experience and Nature,* has appeared, published by W. W. Norton & Co. This edition contains a new Preface, summarizing the argument of each chapter, and a new first chapter. From Professor Dewey's Preface we quote: "The publication of this new edition has made it possible to rewrite completely the first chapter as well as to make a few minor corrections throughout the volume. The first chapter was intended as an introduction. It failed of its purpose; it was upon the whole more technical and harder reading than the chapters which it was supposed to introduce, It was also rather confused in mode of presentation, and at one important point in thought as well. It is hoped that its new form is both simpler and possessed of greater continuity."

Two handsome volumes, entitled *Characters and Events,* have been published by Henry Holt & Company. They consist of Professor Dewey's "popular social and political writings" admirably collected and arranged by Mr. Joseph Ratner. They are grouped into five "Books," whose titles indicate their general subject-matter: 1, Characters; II, Events and Meanings; III, America; IV, War and Peace; V, Towards Democracy. Both the publisher and the editor are to be congratulated on the splendid appearance of these volumes; their content speaks for itself.

At a recent meeting of the Board of Trustees of Indiana University, it was voted to accept the recommendation of President Bryan that the Department of Psychology be separated from the Department of Philosophy, that Professor William F. Book continue as head of the Department of Psychology, and that Professor D. S. Robinson of Miami University be appointed Professor of Philosophy and head of the Department of Philosophy.

Gregory D. Walcott has been promoted from Associate Professor to Professor of Philosophy at Long Island University. In December Professor Walcott was elected to the Council of the History of Science Society for a term of three years.

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Book Reviews. Journals and New Books. Notes and News.

Volume XXVI. No. 6. March 14, 1929.

A Persistent Motive for Social Organization. H. G. TOWNSEND.
Language as Behavior and as Symbolism. J. R. KANTOR.
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Volume XXVI. No. 7. March 28, 1929.

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Volume XXVI. No. 8. April 11, 1929.

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Volume XXVI. No. 10. May 9, 1929.

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